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Green Building Technology

Case Studies in Energy and Environmental Leadership



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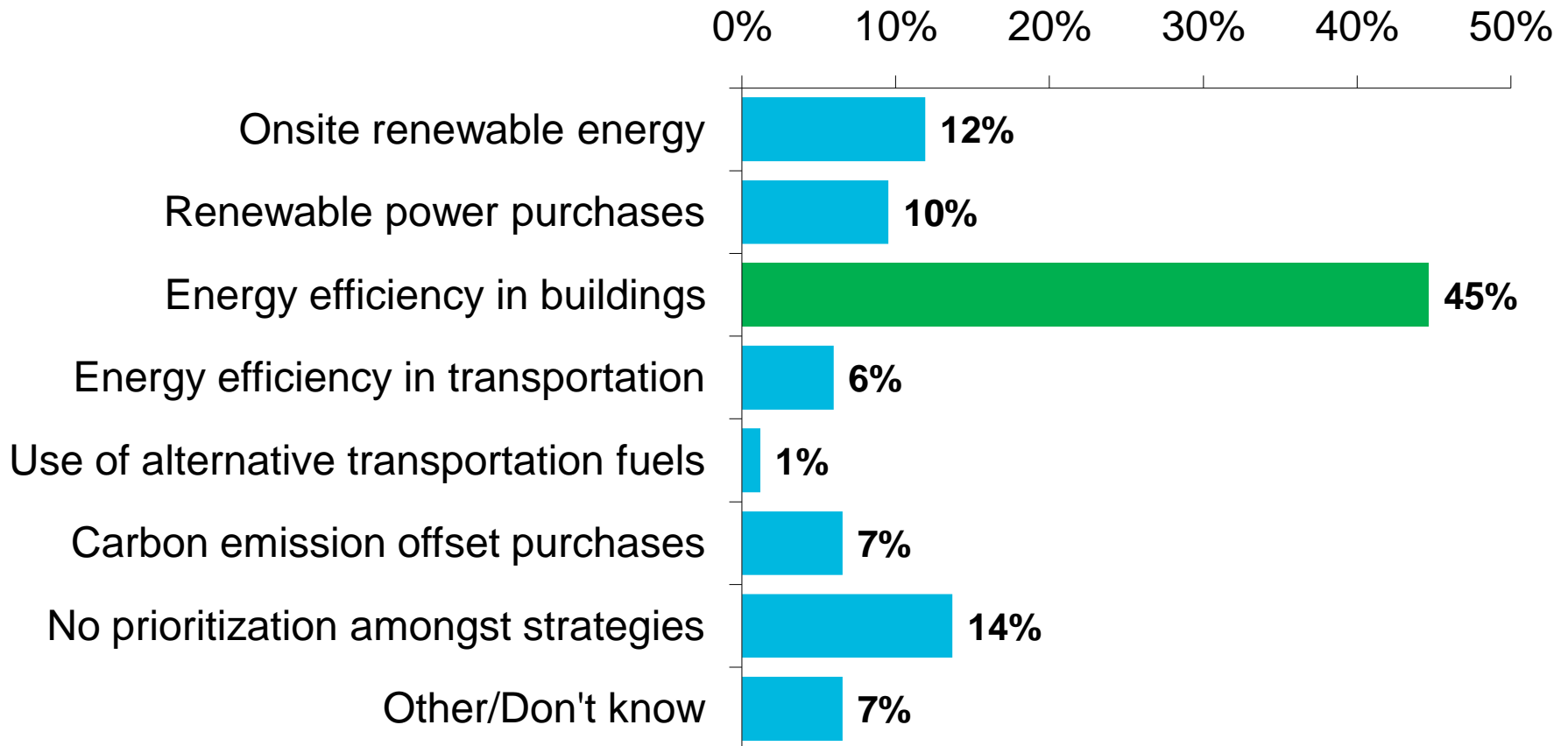
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Building efficiency is top carbon strategy

What is your company's top strategy going forward to meet its carbon reduction goal?



Source: Johnson Controls Energy Efficiency Indicator Study 2009 (n=1422)

IDeAS Net Zero Energy Building Case Study

- Integrated Design Associates offices in San Jose, California
- Commercial Building Retrofit Project
- Geothermal heat pump with floor-based radiant heating and cooling
- Dedicated outdoor air ventilation unit
- Solar PV-integrated membrane roofing
- High efficiency windows and lighting with active day-lighting control
- 40% better than 2005 California Title 24 energy requirements



Empire State Building Case Study



- Super-Insulating Windows
- Radiator Insulation
- Tenant Day-Lighting Control
- Variable-Speed Chiller Retrofit
- High Efficiency Air Handling Units
- Demand Controlled Ventilation
- Wireless Building Control System
- Tenant Energy Management System



Expected Results

\$4.4 million

annual energy cost savings

Top 10%

of commercial buildings in efficiency

38%

energy reduced annually

3.1 years

payback incremental cost

105,000

metric tons carbon emissions saved
over the next 15 years

